UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte BRIAN D. GRAGG

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Appeal 2009-001469
Application 10/628,918
Technology Center 2100

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Decided: October 5, 2009

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Before LANCE LEONARD BARRY, JOHN A. JEFFERY, and
CAROLYN D. THOMAS, *Administrative Patent Judges.*

JEFFERY, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's
rejection of claims 1-27. We have jurisdiction under 35 U.S.C. § 6(b). We
affirm-in-part.

STATEMENT OF THE CASE

Appellant invented an image forming device (e.g., printer, copier,
etc.) that includes a storage device for storing data. A storage access

manager coordinates access to the storage device from multiple client devices that communicate with the storage device using at least one uncoordinating communication protocol (i.e., a protocol that enables one client to access the storage device without other clients being aware of such access).[1] Claim 1 is illustrative with the key disputed limitation emphasized:

1. An image forming device comprising:

a storage device for storing data; and

a storage access manager configured to coordinate access to the storage device from a plurality of client devices that communicate with the storage device using at least one *uncoordinating* communication protocol.

The Examiner relies on the following as evidence of unpatentability:

McIntyre	US 2003/0063305A1	Apr. 3, 2003
Erlingsson	US 2003/0233544 A1	Dec. 18, 2003 (filed June 14, 2002)
Quinn	US 2004/0006616 A1	Jan. 8, 2004 (filed Feb. 25, 2003)

1. The Examiner rejected claims 11-19 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Ans. 3-7.

2. The Examiner rejected claims 1-27 under 35 U.S.C. § 103(a) as unpatentable over McIntyre and Quinn. Ans. 7-15.

3. The Examiner rejected claims 4, 13, and 21 under 35 U.S.C. § 103(a) as unpatentable over McIntyre, Quinn, and Erlingsson. Ans. 15-16.

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[1] *See generally* Abstract; Spec. ¶¶ 0016, 0024-26.

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer[2] for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

THE § 101 REJECTION

Regarding representative claim 11,[3] the Examiner finds that the recited computer-readable medium encompasses non-statutory transmission media or signals when interpreted in light of the Specification, and therefore is not limited to statutory subject matter under § 101. Ans. 3-7 and 16-20.

Appellant argues that claim 11 expressly recites "[a]n article of manufacture"—one of the categories of statutory subject matter under § 101. Appellant adds that the Examiner not only improperly dissected the claimed invention and evaluated certain elements in isolation, but also improperly imported limitations from the Specification into the claims. App. Br. 10-12; Reply Br. 2-3.

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[2] Throughout this opinion, we refer to (1) the Appeal Brief filed August 7, 2007; (2) the Examiner's Answer mailed October 9, 2007; and (3) the Reply Brief filed December 4, 2007.

[3] Appellant argues claims 11-19 together as a group. *See* App. Br. 10-12. Accordingly, we select claim 11 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

The issue before us, then, is as follows:

ISSUE

Has Appellant shown that the Examiner erred in rejecting claim 11 under § 101 by finding that the recited computer-readable medium encompasses non-statutory transmission media or signals?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence:

Appellant's Disclosure

1. According to Appellant's Specification, "'[c]omputer-readable medium' . . . refers to any medium that participates in directly or indirectly providing signals, instructions and/or data to one or more processors for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and *transmission media*." Spec. ¶ 0009 (emphasis added).

2. "Transmission media can . . . take the form of electromagnetic radiation, such as those generated during radio-wave and infra-red data communications, or take the form of one or more groups of signals." *Id.*

3. A common form of computer-readable media includes, among other things, "a carrier wave/pulse." *Id.*

4. "Signals used to propagate instructions or other software over a network . . . are also considered a 'computer-readable medium.'" *Id.*

PRINCIPLES OF LAW

Signals are not patentable subject matter under § 101. *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007), *reh'g denied en banc*, 515 F.3d 1361 (Fed. Cir. 2008), and *cert. denied*, 129 S. Ct. 70 (2008)).

According to U.S. Patent & Trademark Office (USPTO) guidelines,

> A claim that covers both statutory and non-statutory embodiments . . . embraces subject matter that is not eligible for patent protection and therefore is directed to non-statutory subject matter. . . . For example, a claim to a computer readable medium that can be a compact disc or *a carrier wave* covers a non-statutory embodiment and therefore should be rejected under § 101 as being directed to non-statutory subject matter.

U.S. Patent & Trademark Office, *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, Aug. 2009, at 2, *available at* http://www.uspto.gov/web/offices/pac/dapp/opla/2009-08-25_interim_101_instructions.pdf (emphasis in original) ("Interim Instructions").

ANALYSIS

Independent claim 11 calls for, in pertinent part, "an article of manufacture embodied in a computer-readable medium." Although the preamble nominally characterizes the claimed invention as an "article of manufacture"—one of the categories of statutory subject matter under § 101—that characterization is hardly dispositive, for we must assess the claim as a whole to determine whether it recites statutory subject matter. *See Diamond v. Diehr*, 450 U.S. 175, 188 (1981).

In this case, the Specification unambiguously indicates that a computer-readable medium includes "transmission media" that can be in the form of electromagnetic radiation or signals. FF 1, 2, and 4. The Specification further notes that computer readable media can include a carrier wave or pulse. FF 3.

But signals are not patentable subject matter under § 101. *Nuijten*, 500 F.3d at 1355. Thus, when interpreted in light of the Specification, independent claim 11 encompasses both statutory subject matter (tangible storage media) and non-statutory subject matter (signals and carrier waves). Such claims, however, are directed to non-statutory subject matter under § 101. Interim Instructions, at 2.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner's rejection of representative claim 11. Therefore, we will sustain the Examiner's rejection of that claim, and claims 12-19 which fall with claim 11.

THE OBVIOUSNESS REJECTION OVER MCINTYRE AND QUINN

Regarding independent claim 1, the Examiner finds that McIntyre discloses an image forming device with all the claimed subject matter except for the client devices communicating with the storage device using at least one uncoordinating communication protocol. The Examiner, however, cites Quinn for this feature in concluding that the claim would have been obvious. Ans. 7-8.

In reaching this conclusion, the Examiner reasons that since McIntyre teaches that (1) clients can use different message types, formats, and communication protocols to communicate requests to the command server, and (2) these clients could compete for access to the data storage device without notifying other clients of such access, then McIntyre teaches coordinating access using an uncoordinating communication protocol as claimed. Ans. 8 and 20-22.

Appellant argues that Quinn's use of "different" protocols does not mean that *uncoordinating* communication protocols are used (i.e., protocols that do not provide notice of access to other protocols or devices). App. Br. 12-15 (emphasis added). According to Appellant, "different" protocols could be different coordinating protocols that provide notice of access to each other. Reply Br. 4.

The issue before us, then, is as follows:

ISSUE

Under § 103, has Appellant shown that the Examiner erred in rejecting claim 1 by finding that McIntyre and Quinn collectively teach or suggest a storage access manager configured to coordinate access to a storage device from multiple client devices using at least one uncoordinating communication protocol as claimed?

FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

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McIntyre

5. McIntyre discloses a document production system for setting, controlling, querying, and saving printer control settings. McIntyre, Abstract.

6. McIntyre's system includes multiple printers 120 that communicate with a computer 110 via serial cables, parallel cables, SCSI ports, USB ports, IR ports, or other suitable wired or wireless communication technologies. McIntyre, ¶ 0023; Fig. 1.

7. Computer 110 includes a printer control program 150 that facilitates the creation, storage, and preservation of printer control settings. McIntyre, ¶ 0024; Fig. 1.

8. In another embodiment, the printer control program 250 resides within each printer 220, and the user can save the printer control settings to storage media 240 in printer-readable formats. McIntyre, ¶ 0032-33; Fig. 2.

Quinn

9. Quinn discloses storage environment management techniques. In one implementation, a computer system 202 with a command server application program 208 ("command server") provides high-level application programming interfaces (APIs) for use by storage management applications (i.e., client applications 212). Using these APIs, a storage environment management application can issue simple high-level commands to perform storage management operations without having to worry about the low-level array-specific commands. Quinn, Abstract; ¶¶ 0019-20; Figs. 2 and 5.

10. Client applications 212 communicate with computer system 202 via communication links 206. Various communication protocols can be used including TCP/IP, HTTP, XML, wireless application protocol, etc. Quinn, ¶¶ 0022, 0025, 0032; Figs. 2 and 5.

11. Exemplary client applications 212 include storage management applications, third party applications, etc. Client applications may use different message types/formats and communication protocols to communicate command requests to command server 208 (e.g., formats including XML, HTTP, command line interface, etc.). Quinn, ¶ 0047.

12. After receiving a command request responsive to an API invoked by a client application, command server 208 determines (1) a particular storage array to which the request is directed, and (2) a communication protocol for communicating with the particular storage array (e.g., Simple Network Management Protocol (SNMP), TCP/IP, proprietary protocols, etc.). The command server then determines a low-level command in the protocol used by the storage array to perform the requested command. Quinn, ¶ 0028, 0033; Fig. 3 (steps 302-308).

13. Figure 5 details the command server 208 which includes (1) security layer 502; (2) translation layer 504; (3) agent layer 506; and (4) transport layer 508. Quinn, ¶ 0046; Fig. 5.

14. The translation layer comprises communication modules 510 that can use various protocols and formats to interface with client applications 212. Quinn, ¶ 0048; Fig. 5.

15. The agent layer selects and invokes an agent 518 for processing the command request. For example, an "AddVolume" agent is selected to process an "AddVolume" command request. To this end, the "AddVolume"

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agent performs various operations including (1) gaining exclusive access to (or locking) the storage array; (2) obtaining the storage array's latest data configuration; (3) adding a volume to the storage array; (4) verifying that the volume was properly added; and (5) releasing the lock on the storage array. Quinn ¶¶ 0051-52, 0063; Figs. 5 and 6.

Appellant's Disclosure

16. According to Appellant's Specification, "uncoordinating communication protocols include protocols from different devices that may compete for access to the storage device 105 where at least one protocol does not provide notice of the access to the other protocol or device." Spec. ¶ 0016. *Accord* Spec. ¶ 0024.

17. "In general, uncoordinating communication protocols may include protocols where one client can potentially access the storage device without other clients being aware of such access." Spec. ¶ 0024.

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). If the Examiner's burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

"[T]he specification is the single best guide to the meaning of a disputed term, and . . . acts as a dictionary when it expressly defines terms in the claims or when it defines terms by implication." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc) (internal quotation marks and citations omitted).

> According to the U.S. Supreme Court:
>
> When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR Int'l v. Teleflex, Inc., 550 U.S. 398, 421 (2007).

ANALYSIS

Claims 1-10

We begin by construing the term "uncoordinating communication protocol," for it is a key term in the dispute before us. To this end, we turn to Appellant's Specification since it is the single best guide to ascertain the meaning of a disputed term. *Phillips,* 415 F.3d at 1321.

Appellant's specification defines "uncoordinating communication protocols" as protocols in which one client can potentially access a storage device without other clients being aware of such access. FF 16-17. That is, uncoordinating communication protocols do not notify other protocols or devices regarding this access. FF 16.

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With this construction, we turn to the cited prior art. In the rejection, the Examiner acknowledges that McIntyre does not disclose using uncoordinating communication protocols, and relies on Quinn for this feature. Ans. 8. But in the Response to Arguments section, the Examiner nonetheless asserts that McIntyre's client devices "may compete for access to the data storage device, and at least one protocol or device does not provide notice of the access to the other protocol or device . . . ." Ans. 21.

Although Appellant acknowledges that McIntyre's devices may compete for access (Reply Br. 4), we agree with Appellant that McIntyre fails to disclose ways to deal with such situations, let alone teach or suggest coordinating access using an uncoordinating protocol as claimed. McIntyre does indicate that the printers communicate with the computer 110 via a variety of ways, including using serial cables, parallel cables, SCSI ports, USB ports, IR ports, or other suitable wired or wireless communication technologies. FF 6. But even assuming that the protocols associated with these diverse communication technologies are different, we cannot say that they constitute "uncoordinating communication protocols" as the Examiner asserts, let alone that McIntyre's system coordinates access based on such protocols. To do otherwise would require us to resort to speculation.

We reach a similar conclusion regarding Quinn. To be sure, Quinn uses a variety of different communication protocols to interface with the client applications to, among other things, communicate command requests to the command server. FF 10, 11, and 14. And Quinn's command server selects a protocol from a variety of different protocols to communicate with

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a particular storage array. FF 12. But nothing in Quinn indicates that these protocols are uncoordinating communication protocols as claimed. As Appellant indicates (Reply Br. 4), these protocols could very well be coordinating and therefore notify each other regarding access.

Although Appellant's assertion is just as speculative as the Examiner's regarding uncoordinated protocols in Quinn (Ans. 21-22), we nonetheless find that Quinn is silent in this regard. Consequently, any assertions about the nature of these protocols as "uncoordinated" or otherwise without corroborating evidence amounts to pure speculation.

That said, however, we recognize that this case presents us with a close question. On the one hand, the cited references' silence about the nature of the protocols being "coordinating" could arguably mean that they are "uncoordinating" by negative implication.[4] That is, can we reasonably assume that McIntyre's and Quinn's protocols are "uncoordinating" absent evidence to the contrary?

Although this is a difficult question, we nonetheless answer this question "no" based on the record before us. As we indicated previously, Appellant has defined the term "uncoordinating communication protocol" specifically in the Specification (FF 16-17), and to find that the unspecified protocols in Quinn meet this criteria would require us to resort to speculation. That we will not do.

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[4] In that sense, the term "uncoordinating" would be akin to a negative limitation. *See generally Animal Legal Defense Fund v. Quigg*, 932 F.2d 920, 923 (Fed. Cir. 1991) ("The use of a negative limitation to define the metes and bounds of the claimed subject matter is a permissible form of expression.").

On the other hand, any given communications protocol is arguably either coordinating or it is not. As such, there would be only two possibilities for any such protocol: coordinating and uncoordinating. In that sense, these two possibilities would therefore constitute a finite number of identified, predictable solutions that could raise a legitimate question as whether it would have been obvious to try these two different protocols, assuming that there is a design need or market pressure to solve such a problem. *See KSR*, 550 U.S. at 421 ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.").

But whether this is actually the case is a question we cannot answer on the record before us, for there may be other types of protocols that could include attributes of both coordinating and uncoordinating protocols. As such, we cannot say that there would be a finite number of identified, predictable solutions, let alone that it would have been obvious to try them to arrive at the claimed invention.

In any event, there is insufficient evidence on the record before us to establish that the protocols in Quinn (or McIntyre for that matter) are uncoordinating or otherwise. We are therefore constrained by the record before us to reverse the Examiner's obviousness rejection of independent claim 1, and dependent claims 2-10 for similar reasons.

Claims 11-27

We reach a similar conclusion regarding independent claim 11 which calls for, in pertinent part, that the first communication protocol does not provide notice of an access to the second communication protocol. This limitation essentially restates the function of an "uncoordinating communication protocol" in accordance with the term's definition. *See* FF 16-17. Since we find insufficient evidence on this record of such a protocol, we cannot sustain the Examiner's rejection of independent claim 11 for the reasons indicated with respect to claim 1.

We also find the Examiner's reliance (Ans. 23) on Quinn's "AddVolume" agent (FF 15) as purportedly teaching the recited contention logic problematic at best. First, the Examiner's assertion that gaining exclusive access or locking the storage array allegedly "intrinsically results from a simultaneous access conflict between a requesting (or pending) agent and the agent currently accessing the storage array" (Ans. 23) is unfounded and unpersuasive.

To be sure, Quinn's "AddVolume" agent performs various operations including gaining exclusive access to (or locking) the storage array. FF 15. But there is nothing to suggest that there is any "access conflict" resulting in this operation as the Examiner seems to suggest, let alone a simultaneous access conflict.

Nevertheless, claim 11 calls for "contention logic" that defines "rights for simultaneous access to the storage device" from the two recited protocols. In this sense, we can see how Quinn's locking the storage array for exclusive access (FF 15) would, in effect, define "rights for simultaneous access" to the storage device—namely, *no right* to simultaneous access.

But this interpretation, at best, requires an inference that there would be a received access request following this locking procedure (a circumstance that is not disclosed in Quinn in any event), and that Quinn's system would somehow determine whether access is permissible based on the "contention status" between the locked state and the subsequent access request. We find that such an interpretation of this functionality strained at best, and, as such, merely speculative. We are therefore persuaded that the Examiner erred in rejecting claim 11 for this additional reason.

For the foregoing reasons, Appellant has persuaded us of error in the Examiner's rejection of independent claim 11, and dependent claims 12-19 for similar reasons. Since independent claim 20 recites limitations commensurate to those in claim 11, we will also not sustain the Examiner's rejection of claims 20-27 for similar reasons.

THE OBVIOUSNESS REJECTION OVER MCINTYRE, QUINN, AND ERLINGSSON

Regarding the obviousness rejection of dependent claims 4, 13, and 21 (Ans. 15-16), since we find that Erlingsson does not cure the deficiencies noted above with respect to the independent claims, we will not sustain the obviousness rejection of claims 4, 13, and 21 for similar reasons.

CONCLUSIONS

Appellant has not shown that the Examiner erred in rejecting claims 11-19 under § 101. Appellant, however, has shown that the Examiner erred in rejecting claims 1-27 under § 103.

ORDER

The Examiner's decision rejecting claims 1-27 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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